

ANALYTICAL RESULTS

Prepared for:

SUN: Aquaterra Tech.
PO Box 744
West Chester PA 19381

610-431-5733

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

July 20, 2009

SAMPLE GROUP

The sample group for this submittal is 1153309. Samples arrived at the laboratory on Tuesday, July 14, 2009. The PO# for this group is PHILADELPHIA.

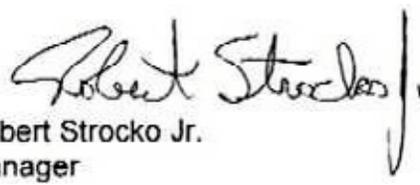
Client DescriptionBH-32-09 Grab Soil
BH-31-09 Soil**Lancaster Labs Number**5722432
5722433**METHODOLOGY**

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Langan	Attn: Dennis Webster
ELECTRONIC COPY TO	SUN: Aquaterra Tech.	Attn: Megan Breen
ELECTRONIC COPY TO	SUN: Aquaterra Tech.	Attn: Tiffani Doerr
ELECTRONIC COPY TO	LLI	Attn: EDD Group
ELECTRONIC COPY TO	Langan	Attn: Kristen Ward

Questions? Contact your Client Services Representative
Jessica A Oknefski at (717) 656-2300

Respectfully Submitted,



Robert Strocko Jr.
Manager

Lancaster Laboratories Sample No. SW 5722432

Group No. 1153309
PA

BH-32-09 Grab Soil
Philadelphia Refinery AOI-6
COC: 215457 BH-32-09

Collected: 07/13/2009 09:34 by KM

Account Number: 10132

Submitted: 07/14/2009 14:45
Reported: 07/20/2009 at 14:16
Discard: 09/19/2009

SUN: Aquaterra Tech.
PO Box 744
West Chester PA 19381

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
SW-846 6020	Metals		mg/kg	mg/kg	mg/kg	
06135	Lead	7439-92-1	186	1.08	0.161	10
SM20 2540 G	Wet Chemistry		%	%	%	
00111	Moisture	n.a.	9.7	0.50	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06135	Lead	SW-846 6020	1	091966150002A	07/16/2009 13:53	David K Beck	10
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	091966150002	07/15/2009 21:05	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09197820001A	07/16/2009 15:17	Scott W Freisher	1

Lancaster Laboratories Sample No. SW 5722433

Group No. 1153309
PA

BH-31-09 Soil
Philadelphia Refinery AOI-6
COC: 215457 BH-31-09

Collected: 07/13/2009 10:00 by KM

Account Number: 10132

Submitted: 07/14/2009 14:45
Reported: 07/20/2009 at 14:16
Discard: 09/19/2009

SUN: Aquaterra Tech.
PO Box 744
West Chester PA 19381

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
SW-846 6020	Metals		mg/kg	mg/kg	mg/kg	
06135	Lead	7439-92-1	501	1.06	0.159	10
SM20 2540 G	Wet Chemistry		%	%	%	
00111	Moisture	n.a.	7.5	0.50	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06135	Lead	SW-846 6020	1	091966150002A	07/16/2009 13:55	David K Beck	10
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	091966150002	07/15/2009 21:05	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09197820001A	07/16/2009 15:17	Scott W Freisher	1

Quality Control Summary

 Client Name: SUN: Aquaterra Tech.
 Reported: 07/20/09 at 02:16 PM

Group Number: 1153309

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank LOQ**</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 091966150002A	Sample number(s): 5722432-5722433								
Lead	< 1.00	1.00	0.150	mg/kg	106		78-122		
Batch number: 09197820001A	Sample number(s): 5722432-5722433								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 091966150002A	Sample number(s): 5722432-5722433 UNSPK: P716347 BKG: P716347								
Lead	97	96	75-125	1	20	< 1.00	< 1.00	7 (1)	20
Batch number: 09197820001A	Sample number(s): 5722432-5722433 BKG: P720797								
Moisture						15.1	12.1	22*	15

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 10132 Group# 1153309 Sample # 5-722432-33 **COC #** 215457

Please print. Instructions on reverse side correspond with circled numbers.

<p>1 Client: <u>Aqualena Technologies</u> Acct. #: _____</p> <p>Project Name/ #: <u>Philly Ref- A01-6</u> PWSID #: _____</p> <p>Project Manager: <u>T. DOERR</u> P.O.#: _____</p> <p>Sampler: <u>KEVIN MARTIN</u> Quote #: _____</p> <p>Name of state where samples were collected: <u>PA</u></p>		<p>4</p>		<p>5 Analyses Requested</p>		<p>For Lab Use Only</p> <p>FSC: _____</p> <p>SCR#: _____</p>		<p>6</p>	
				<p>Preservation Codes</p>		<p>Preservation Codes</p> <p>H=HCl T=Thiosulfate</p> <p>N=HNO₃ B=NaOH</p> <p>S=H₂SO₄ O=Other</p>			
<p>2</p>		<p>3</p>		<p>4</p>		<p>5</p>		<p>6</p>	
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks
<u>BH-32-09</u>	<u>7/13/09</u>	<u>9:34 AM</u>	<u>X</u>		<u>X</u>			<u>1</u>	<u>temp 1.6°C</u>
<u>BH-31-09</u>	<u>11</u>	<u>10:00 AM</u>			<u>X</u>			<u>1</u>	
<p>Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush</p> <p>Rush TAT is subject to Lancaster Laboratories approval and surcharge.)</p> <p>When results are needed: _____</p> <p>Rush results requested by (please circle): Phone Fax <u>E-mail</u></p> <p>Phone #: _____ Fax #: <u>412-242-1000</u></p> <p>Email address: <u>cc: dwebster@lancaster.com</u></p>			<p>Relinquished by: <u>[Signature]</u> Date: <u>7/13/09</u> Time: _____</p>		<p>Received by: <u>Fridge</u> Date: <u>7/13/09</u> Time: _____</p>				
<p>Package Options (please circle if required)</p> <p>Validation (validation/NJ Reg) <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/></p> <p>Tier II <input type="checkbox"/> MA MCP <input type="checkbox"/> CT RCP <input type="checkbox"/></p> <p>Reduced NJ <input type="checkbox"/> Site-specific QC (MS/MSD/Dup)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>CLP SOW <input type="checkbox"/> (If yes, indicate QC sample and submit triplicate volume.)</p> <p>Raw Data Only <input type="checkbox"/> Internal COC Required? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>			<p>Relinquished by: <u>[Signature]</u> Date: <u>7/14/09</u> Time: <u>1030</u></p>		<p>Received by: <u>P. Lefer</u> Date: <u>7/14/09</u> Time: <u>1030</u></p>				
<p>SDG Complete? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>			<p>Relinquished by: <u>[Signature]</u> Date: <u>7/14/09</u> Time: <u>1445</u></p>		<p>Received by: _____ Date: _____ Time: _____</p>				
<p>Relinquished by: _____ Date: _____ Time: _____</p>			<p>Relinquished by: _____ Date: _____ Time: _____</p>		<p>Received by: <u>Kristin Leigh</u> Date: <u>7-14-09</u> Time: <u>1445</u></p>				

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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